

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

STANDARDS AND SYMBOLS  
FOR  
PHOTOGRAMMETRIC MAPPING  
(SSPM)

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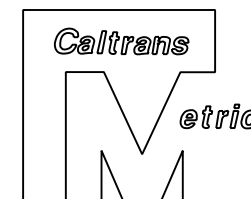
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<http://www.dot.ca.gov/hq/esc/photogrammetry/>



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# CONTROL

LEVEL 1 - COLOR 5

SHOW ALL FIELD CONTROL AND ANALYTICAL POINTS IN MODELS USED.  
ALL CONTROL SHALL BE ROTATED IN THE DIRECTION OF THE FLIGHT LINE.  
CONTROL CELLS NEED TO BE POINT CELLS AND VIEW INDEPENDENT.

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
C-0	$\begin{array}{c} 9101020 \\ \oplus \\ 12345.12 \end{array}$	0	ATC	ANALYTICAL (PUG) POINT TO 3 DECIMAL PLACES IN X,Y ROUND TO 2 PLACES IN Z
C-1	$\begin{array}{c} \text{---VC-1A---} \\ \circ \\ \underline{12345.123} \end{array}$	0	VC	VERTICAL FIELD CONTROL POINT ACCURATE TO 3 DECIMAL PLACES IN X,Y, AND Z
C-2	$\begin{array}{c} \text{---HC-1A---} \\ \triangle \end{array}$	0	HC	HORIZONTAL FIELD CONTROL POINT PLACE AT X,Y,Z GIVEN IN CONTROL FILE
C-3	$\begin{array}{c} \text{--HVC-1A--} \\ \triangle \\ \underline{12345.123} \end{array}$	0	HVC	HORIZONTAL AND VERTICAL FIELD CONTROL POINT ACCURATE TO 3 DECIMAL PLACES IN X,Y, AND Z
C-4	$\begin{array}{c} \text{--AI&I--\#15C--} \\ \diamond \\ 12345.12 \end{array}$	0	C4	MISCELLANEOUS ANALYTICAL POINT TO 3 DECIMAL PLACES IN X,Y ROUND TO 2 PLACES IN Z
C-5	$\begin{array}{c} P C \\ \circ \\ 10A \uparrow 1234 \end{array}$	0	PC	PHOTO CENTERS SHALL BE ORIENTED SO THAT THEIR TEXT IS RIGHT- READING WHEN THE NUMBERS INCREASE LEFT TO RIGHT. (IN THE DIRECTION OF THE ACTIVE ANGLE OF THE FLIGHT LINE)

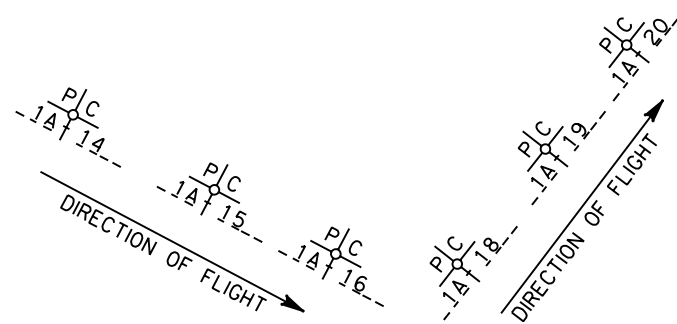
# CONTROL

LEVEL 1 - COLOR 5  
CONTINUED

OoP  
REFERENCE  
CODE

C-6

EXAMPLE OF PHOTO  
CENTER LAYOUT



PLACE CONTROL AND PHOTO CENTERS IN TOP VIEW, NOT A ROTATED VIEW.  
ALL CONTROL AND PHOTO CENTERS SHOULD BE PLACED AT THE TRUE  
GROUND ELEVATION.

TIP:  
SET ACTIVE ANGLE TO DIRECTION OF FLIGHT LINE. USE PLACPNT01.BAS MACRO TO LOAD  
CONTROL POINTS AND PHOTO CENTERS FROM DATA IN THE OFFICE OF PHOTOGRAMMETRY  
SUPPLIES \*.GPE FILE.

# MANMADE PLANIMETRY

LEVEL 2 - COLOR 4

OoP  
REFERENCE  
CODE

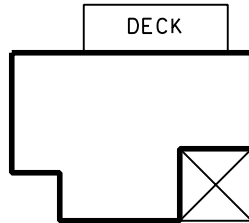
EXAMPLE

WT

CELL OR  
LINESTYLE NAME

DESCRIPTION

M-1



0

ph-Deck

A) LABEL DECKS, USE 'D' FOR SMALL DECKS.

2

ph-Build

B) BUILDINGS AND MOBILE HOMES.  
DO NOT SHOW TRAVEL TRAILERS.

0

ph-Deck

C) COVERED PORCH, CARPORT, PATIO,  
AND APARTMENT COVERED PARKING.

M-2

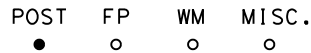


0

LS=0

LABEL TANKS DO NOT SHOW TANKS 1.5 METER  
IN DIAMETER OR SMALLER.

M-3

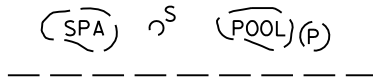


0

POLE  
SP

POST, FLAGPOLE, WINDMILL, LABEL AS SHOWN.

M-4



0

LS=3

CONCRETE LIMIT LINE: DRIVEWAY, PATIO,  
SIDEWALK, GUTTER, LABEL POOL AND SPA.

M-5



0

LS=0

MISCELLANEOUS BOUNDARY: STAIRS, RAMP,  
BOARDWALK. LABEL AS NECESSARY TO CLARIFY.  
LABEL 'RUINS' AND CONSTRUCTION AREAS 'UC'.

M-6

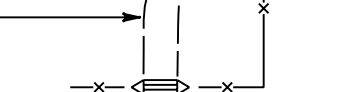


0

ph-Dirt

A) LABEL TRAILS.

M-6A

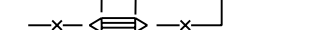


0

ph-Dirt

B) DIRT ROADS.

M-7



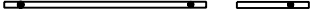

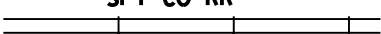
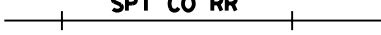


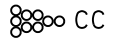
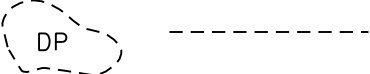
0

ph-Cattle

C) CATTLE GUARD.




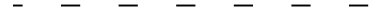
# MANMADE PLANIMETRY

LEVEL 2 - COLOR 4  
CONTINUED

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
M-8		0	LS=0	FREEWAY AND BUSINESS ADVERTISING SIGNS. SHOW POST LOCATION, DO NOT SHOW CATWALK.
M-9		0	SIGN1 SIGN2	ROADSIDE SIGNS AND BILLBOARDS. MINIMUM SIZE=2 mm ON MAP.
M-10		0	ph-RR500 ph-RR200	RAILROAD:1:500 SCALE OR LARGER. CONTOURS AND SPOT ELEVATIONS ON TOP OF TIES. LABEL RAILROAD NAME.
M-11		0	ph-RR1000	RAILROAD: 1:1000 SCALE OR SMALLER CONTOURS AND SPOT ELEVATIONS ON TOP OF TIES LABEL RAILROAD NAME.
M-12		0	ph-MedBar ph-fMedBar	MEDIAN BARRIER - ALL TYPES.
M-13		0	ph-GrdRail	GUARD RAIL.
M-14		0	SP	CRASH CUSHIONS: LABEL AS SHOWN.
M-15		0	LS=2	MISC. BOUNDARY: LABEL DIRT PILES AS SHOWN.


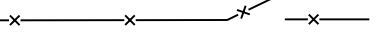




# MANMADE PLANIMETRY

LEVEL 2 - COLOR 4  
CONTINUED

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
M-16		0	ph-Asph	EDGE OF ASPHALT FOR DRIVEWAYS, PRIVATE ROADS, PARKING AREAS, PLAYGROUNDS, ETC. ALSO, SEE R-3 ON LEVEL 3, PAGE 6.
M-17		2	ph-Curb ph-fCurb	BARRIER CURB IN PARKING LOTS, DRIVEWAYS, ETC. (IF STATE, COUNTY, OR CITY ROADS USE R-5). ALSO, SEE LEVEL 3, SEE PAGE 6.
M-18		2	ph-Dike	SYMBOLIZE AND LABEL ASPHALT DIKE AS SHOWN FOR PARKING LOTS.
M-19		0	ph-LnStrp ph-fLnStrp	SYMBOLIZE LANE STRIPES FOR SHOPPING CENTERS AND PRIVATE PARKING LOTS.









# FENCES AND WALLS

LEVEL 2 - COLOR 4

F-1		2	ph-RWall F	RETAINING WALL WITH FENCE ON TOP WITH THE "V" POINTING TOWARDS THE HIGH SIDE. (ADD D-2 BREAK LINE NEAR FRONT AND BACK OF WALL).
F-2		0	ph-Fence	(A) FENCE (B) GATE.
F-3		0	ph-MWall	MASONRY WALL OR SOUNDWALL.
F-4		2	ph-RWall	RETAINING WALL WITH "V" TOWARD HIGH SIDE (ADD D-2 BREAKLINE NEAR FRONT AND BACK OF WALL).
F-5		2	ph-RWall M	RETAINING WALL WITH MASONRY WALL. (ADD D-2 BREAKLINE NEAR FRONT AND BACK OF WALL).
F-6		0	ph-MWall F	MASONRY WALL WITH FENCE ON TOP.

# STATE, COUNTY AND CITY ROADS

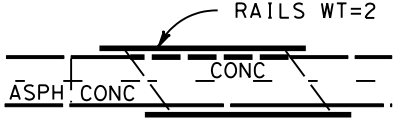

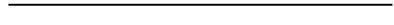

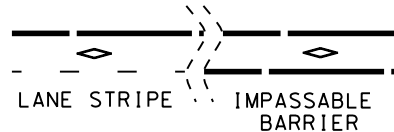
LEVEL 3 - COLOR 4

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
R-1		2	<b>ph-ETW</b> <b>ph-fETW</b>	EDGE OF TRAVELED WAY FOR STATE HIGHWAY. SEE TRAVELED WAY NOTES AND EXAMPLES ON PAGES 8 THRU 10.
R-2		2	<b>ph-ETW2</b> <b>ph-fETW2</b>	EDGE OF TRAVELED WAY FOR RAMPS, COUNTY ROADS AND CITY STREETS.SEE TRAVELED WAY NOTES SEE PAGES 8 THRU 10.
R-3		0	<b>ph-Asph</b>	EDGE OF ASPHALT FOR STATE, COUNTY ROADS AND CITY STREETS. ALSO, SEE M-16 LEVEL 2.
R-4		2	<b>ph-Curb</b> <b>ph-fCurb</b>	CONCRETE BARRIER CURB, (GUTTER IS LS=3, WT=0)
R-5		0	<b>ph-Curb</b> <b>ph-fCurb</b>	CONCRETE BARRIER CURB, NO GUTTER.
R-6		0	LS=3	ROLLED CURB & GUTTER.
R-7		0	LS=3	CONCRETE LIMIT LINE.
R-8		2	<b>ph-Dike</b>	SYMBOLIZE AND LABEL ASPHALT DIKE AS SHOWN.

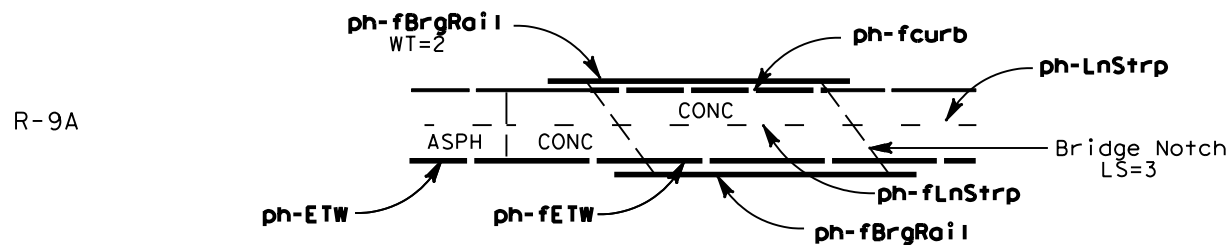


# STATE, COUNTY AND CITY ROADS

LEVEL 3 - COLOR 4  
CONTINUED

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
R-9		2		BRIDGE: SHOW RAILS, CURB, AND ENDS OF BRIDGE. LABEL SURFACE TYPE. LABEL PEDESTRIAN OVERCROSSINGS 'PED OC'. SEE BRIDGE DETAIL BELOW.
R-10		0	<b>ph-LnStrp</b> <b>ph-fLnStrp</b>	LANE STRIPING. SEE TW 8 ON PAGE 8 AND E-7, E-9 ON PAGE 9.
R-11		0	LS=0	CROSSWALK AND STOPLINE/LIMIT LINE.
R-12		2	<b>ph-ETW2</b> LTA	LEFT TURN LANE ARROWS - SYMBOLIZE EXISTING OR ONCE PER MODEL AS NEEDED. DO NOT PLOT OTHER TRAFFIC ARROWS.
R-13		2	<b>ph-ETW</b> DIAMND <b>ph-LnStrp</b>	HIGH OCCUPANCY VEHICLE (HOV) LANE. SYMBOLIZE EXISTING DIAMONDS OR AS NEEDED.

## BRIDGE DETAIL:



# TYPICAL TRAVELED WAY (TW) NOTES FOR R-1& R-2

OoP  
REFERENCE  
CODE

PHOTO

MAPPING

TW-1 CONCRETE

PLACE TW ON EDGES OF CONCRETE.

TW-2 ASPHALT

A) PLACE TW ON FOG STRIPES (EDGE LINES).  
B) IF FOG STRIPE IS LESS THAN 1 m FROM  
EDGE OF ASPHALT, ONLY SHOW FOG STRIPE.

TW-3 CURB AND/OR GUTTER

PLACE IN LIEU OF TW IF CURB IS  
WITHIN ONE METER OF THE FOG STRIPE.

TW-4 BIKE LANE

PLACE TW ON ROADWAY SIDE OF BIKE  
LANE. LABEL 'BIKE LANE'.

TW-5 NO VISIBLE FOG STRIPE

PLACE TW AT EDGE OF ASPHALT.

TW-6 CONTINUOUS LEFT TURN

PLACE TW ON BOTH SIDES OF LEFT  
TURN LANE. PLACE LEFT TURN ARROWS.

TW-7 LEFT TURN CHANNELIZING

PLACE TW IN LIEU OF CHANNELIZED  
STRIPING.

TW-8 TWO LANE HIGHWAY

PLACE R-10 (LANE STRIPE), NOT TW  
ON CENTER LINES.

TW-9 INTERSECTIONS & RAMPS

DO NOT PLACE TW ACROSS RAMP  
ENTRANCES, EXITS, OR INTERSECTIONS.

IF IT IS NOT TYPICAL OR OBVIOUS WHERE TRAVELED WAY SHOULD BE  
PLACED, CALL THE OFFICE OF PHOTOGRAMMETRY IN SACRAMENTO FOR  
GUIDANCE. PLEASE REFER TO EXAMPLES ON PAGE 9.

# TYPICAL TRAVELED WAY EXAMPLES

OoP  
REFERENCE  
CODE

CONCRETE FREEWAY

E-1 ALL TYPES MEDIAN BARRIER

ASPHALT FREEWAY

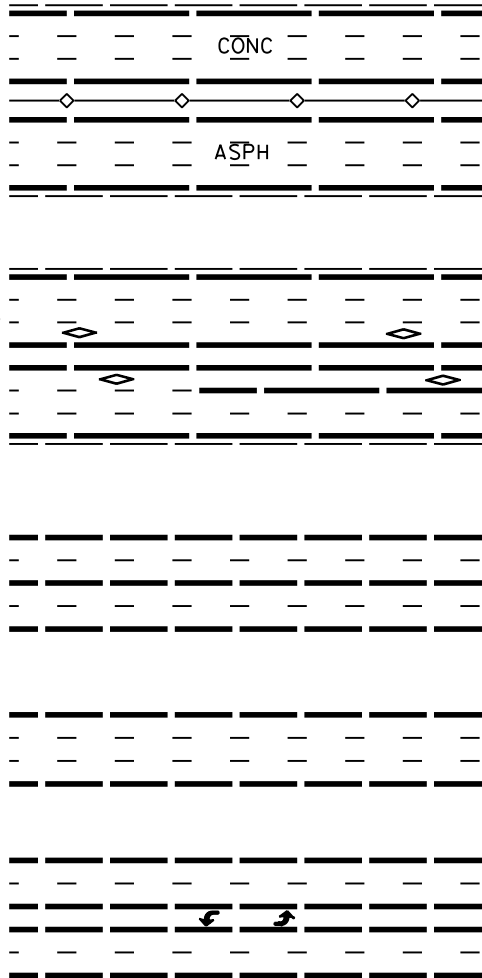
E-2 HIGH OCCUPANCY VEHICLE  
(HOV)

(HOV) WITH BARRIER

E-3 UNDIVIDED MULTI-LANE  
STREET (TWO WAY)

E-4 MULTILANE STREET  
(ONE WAY)

E-5 MULTI-LANE STREET  
WITH CONTINUOUS  
TWO WAY  
LEFT TURN ONLY



OoP  
REFERENCE  
CODE

E-6 TWO LANE STREET  
WITH CONTINUOUS  
TWO WAY  
LEFT TURN ONLY

E-7 MULTILANE STREET  
WITH LEFT TURN  
"POCKETS" AT  
INTERSECTIONS  
(TWO WAY)

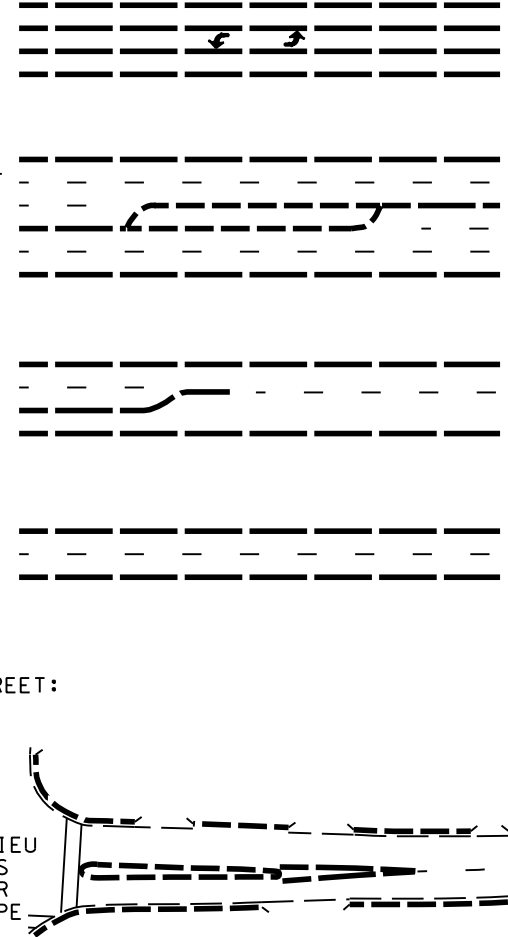
E-8 TWO LANE STREET  
WITH LEFT TURN  
"POCKET" AT  
INTERSECTIONS

E-9 TWO LANE STREET  
NO "FOG STRIPE"

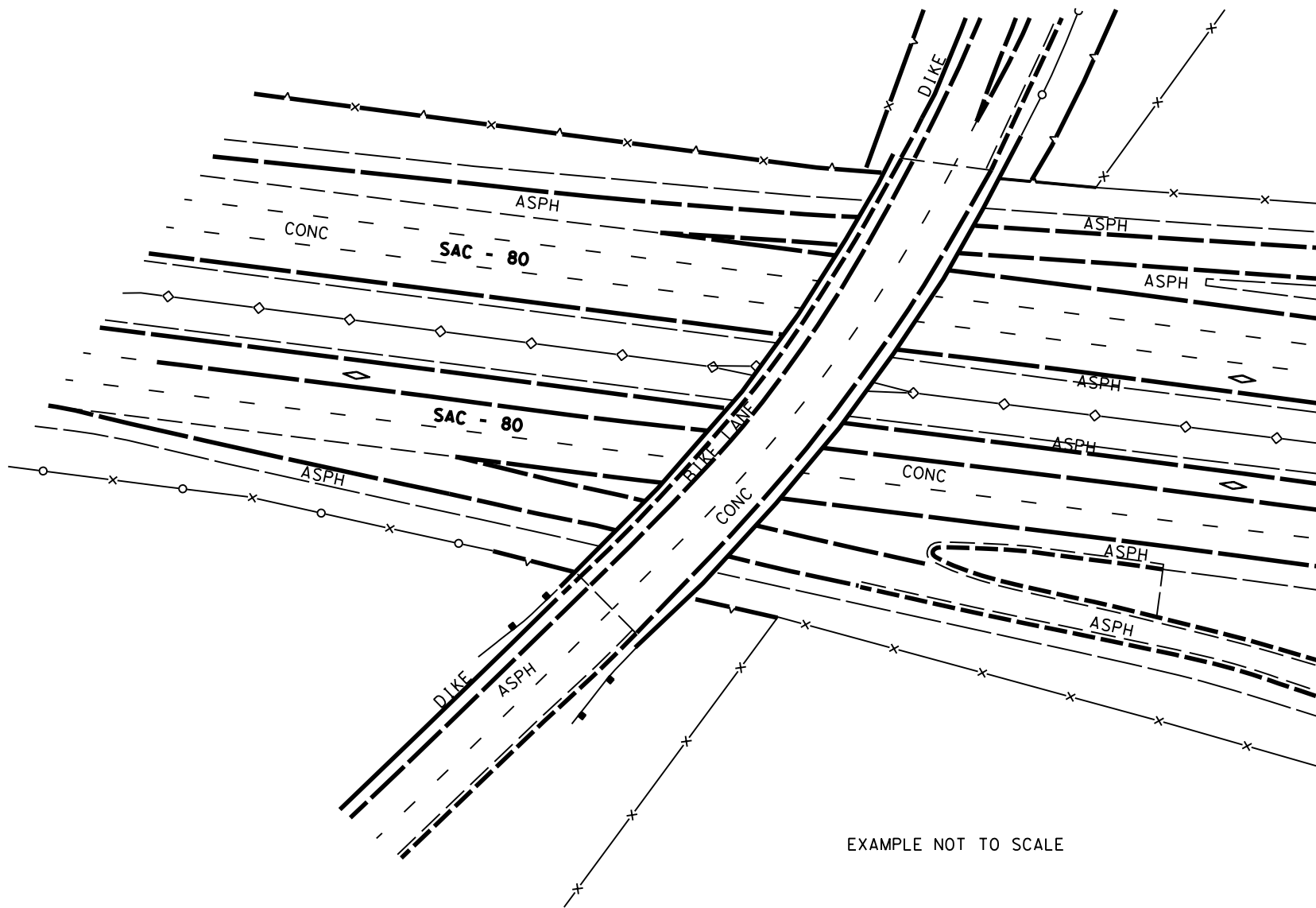
TWO WAY CITY STREET:

CURB AND GUTTER

E-10 PLACE CURB IN LIEU  
OF TW IF CURB IS  
WITHIN ONE METER  
OF THE FOG STRIPE

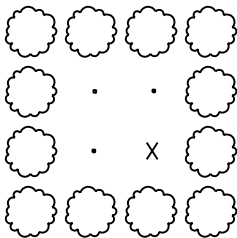
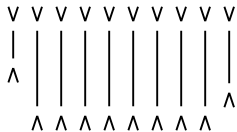



# TYPICAL TRAVELED WAY FOR "ON" AND "OFF" RAMPS



EXAMPLE NOT TO SCALE

# VEGETATION AND NATURAL FEATURES LEVEL 4 - COLOR 2

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
V-1		0	TR4 TR8	<p>ORCHARDS: PERIMETER TREES TO SCALE, USE A "DOT" FOR INTERIOR TREES, "X" FOR MISSING TREES. (USE FONT 2 <b>TEXT</b> FOR THE "X" , 1.5 METER FOR 1:500 MAPPING).</p> <p>DRIP LINE OF TREE COMPILED AT TOP OF FOILAGE.</p>
V-2		0	<b>ph-Vines</b>	<p>VINEYARDS: LINES SHOW ROW DIRECTION, LINESTYLE PLACES THE "V" AT THE ENDS.</p>
V-3		0	<b>ph-Trees</b>	<p>1:1000 SCALE AND SMALLER: SYMBOL AROUND PERIMETER AND LABEL AS SHOWN.</p> <p>NOTE: PLOT PERIMETER TREES AND ROWS FOR 1:500 OR GREATER.</p>

# VEGETATION AND NATURAL FEATURES

LEVEL 4 - COLOR 2  
CONTINUED

OoP  
REFERENCE  
CODE

EXAMPLE

WT

CELL OR  
LINESTYLE NAME

DESCRIPTION

V-4



0

**ph-Trees**  
TR8  
TR4

(A) TREES & PALMS, BRUSH, GROUND COVER GREATER THAN  
1/2 CONTOUR INTERVAL.

LABEL PALM TREES WITH THE LETTER "P" IN THE CENTER.

## REQUIRED LABELS

CULTIVATED  
SCATTERED/ ROCKS  
BRUSH

(B) LABEL ONLY AND DO NOT SYMBOLIZE LARGE AREAS.  
USE REQUIRED LABELS

DENSE/ TREES  
BRUSH  
GROUND COVER  
CROPS

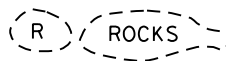
(C) LABEL, SYMBOLIZE, AND DASH CONTOURS THROUGH AREAS  
WITH GROUND COVER OVER ONE HALF CONTOUR INTERVAL  
HIGH. DO NOT DASH CONTOURS THROUGH SINGLE TREES.  
(USE REQUIRED LABELS)

GNV

(D) DO NOT USE GNV IN SMALL AREAS\* OF DENSE TREES.  
USE ONLY IF THERE ARE NO OPENINGS TO PLACE A  
SPOT ELEVATION IN LARGE DENSE TREE AREAS.

\* SMALL AREA IS LESS THAN 50 x 50 mm ON THE MAP.

V-5



0

LS=2

DO NOT CONTOUR LARGE ROCKS HIGHER THAN ONE  
CONTOUR INTERVAL - SYMBOLIZE (LS=2), LABEL,  
AND PLACE A SPOT ELEVATION ON TOP.

V-6



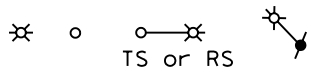

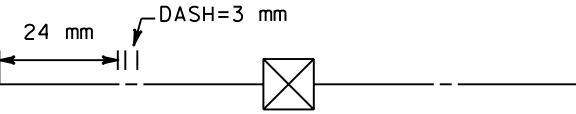






0

MRSH

MARSH OR SWAMP.


# UTILITIES AND DRAINAGE

LEVEL 5 - COLOR 6

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
U-1		0	EL ELT PP	ELECTROLIER, ALUMINUM POLE, TRAFFIC OR RAILROAD SIGNAL (LABEL TS OR RS), AND POLE WITH WIRES AND ELECTROLIER
U-2		0	POLE PP ANCHT	WOOD POLE, POLES WITH WIRES AND GUY WIRE
U-3		0	ph-Wire TRNTOW	TRANSMISSION TOWER (TO SCALE) & LINES
U-4		0	MH	MANHOLE (3 mm DIA)
U-5		0	SP	VALVE COVER, STANDPIPE, WELL, UTILITY BOX, AND RAILROAD CROSSING STANDARD, LABEL AS SHOWN (RECTANGLE SIZE IS NOT STANDARD - (SHOW ACTUAL SIZE)
U-6		0	DI RDI	DRAINAGE INLET (RECTANGLE= 2 X 1,3 mm). ROUND DROP INLET (DIAMETER= 2 mm).
U-7		0	FH	FIRE HYDRANT - OVERALL LENGTH 6 mm.
U-8		2	LS=0	HEADWALLS: D-2 BREAKLINES SHOULD BE PLACED ON GROUND NEAR FRONT AND BACK OF HEADWALLS.
U-9		0	LS=0	LABEL ABOVE GROUND PIPES.

# UTILITIES AND DRAINAGE

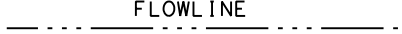
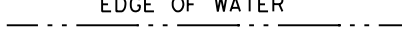
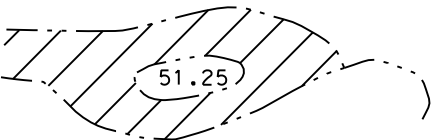
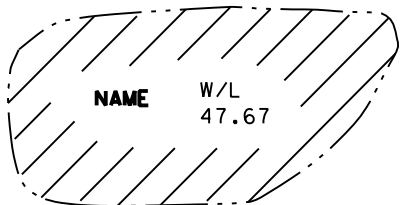
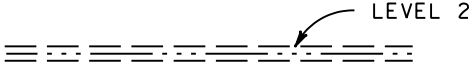

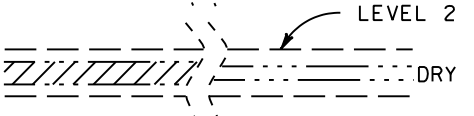
LEVEL 5 - COLOR 6  
CONTINUED

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LIFESTYLE NAME	DESCRIPTION
U-10	<u>  </u> <u>  </u> <u>  </u> <u>  </u> U/G PIPE	0	LS=3	DO NOT SHOW UNDERGROUND PIPES UNLESS, SPECIFIED TO DO SO.
U-11	 3 mm	0	CBX	CALL BOX (3 mm SQUARE).



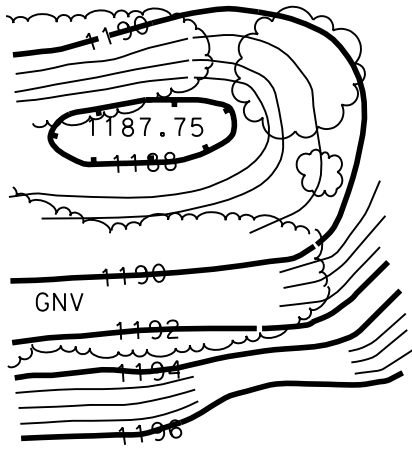
# WATER

LEVEL 6 - COLOR 1

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
W-1	DRY WASH	0		LABEL - DO NOT CROSSHATCH OR SHOW WATER SYMBOL. CONTOURS AND SPOT ELEVATIONS WILL SHOW GENERAL BOUNDARIES.
W-2	 FLOWLINE	0	ph-FL	SMALL NATURAL STREAM OR UNLINED DITCH, SHOW WATER LINE EVEN IF DRY.
W-2A	 EDGE OF WATER	0	ph-Water	SHOW SHORELINE OR WATERS EDGE WITH A BODY OF WATER.
W-3		0		<b>LARGER NATURAL STREAMS:</b> CROSSHATCH AREA AND LABEL NAMES, CROSSHATCHING SHOULD BE APPROXIMATELY 45 DEGREES TO EDGE OF WATER GRADUALLY ROTATE AS STREAM CHANGES DIRECTION, DO NOT CHANGE DIRECTION BETWEEN DESIGN FILES.
W-4		0	ph-Water	<b>STANDING BODIES OF WATER:</b> LABEL WATER LEVEL AS SHOWN. CROSSHATCH AROUND EDGE APPROX. 15 mm INTO WATER. LABEL BODY OF WATER WITH NAME.
W-5		0	ph-FL	CONCRETE LINED "V" DITCH, SHOW FLOW LINE, EVEN IF DRY.
W-6		0	ph-FL	CONCRETE LINED CHANNEL WITH <b>VERTICAL SIDES</b> IF DRY, LABEL 'DRY' AND DO NOT CROSSHATCH.
W-7		0	ph-FL	CONCRETE LINED CHANNEL WITH <b>SLOPING SIDES</b> IF DRY, LABEL 'DRY' AND DO NOT CROSSHATCH. PLACE WATER SYMBOL AT TOE OF SIDES.

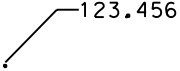

# CONTOURS

LEVEL 7 - COLOR 7

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
K-1		0/2	LS=0	SOLID CONTOUR LINES - OPEN AREAS AND AREAS OF SCATTERED VEGETATION. INDEX CONTOURS WT=2, INTERMEDIATE CONTOURS WT=0.
K-2		0/2	ph-GNV	GROUND NOT VISIBLE - USE DASHED CONTOUR LINES (ph-GNV) IN AREAS OF DENSE VEGETATION. PLACE A SPOT ELEVATION IN OPEN AREAS WHERE POSSIBLE.
K-3				OMIT INTERMEDIATE CONTOURS WHERE THE INDEX CONTOURS ARE CLOSER THAN 8 mm.
K-4				INDEX CONTOURS ONLY IN VERY DENSE AREAS WHERE GROUND IS NOT VISIBLE. FOR LABELS SEE V-4(D) DO NOT LEAVE ANY AREAS BLANK.
K-5		0/2 0/2	ph-DepCont ph-DepGNV	USE DEPRESSION CONTOUR LINESTYLE TO INDICATE DEPRESSIONS. DEPRESSION TICS TO POINT DOWNHILL.
K-6				NOTE: FOR INDEX CONTOUR ANNOTATION (SEE LEVEL 8).
K-7		0/2	ph-fCont ph-fDepCont	FLOAT CONTOUR FOR BRIDGE SURFACE. FLOAT DEPRESSION CONTOUR FOR BRIDGE SURFACE.

# SPOT ELEVATIONS

LEVEL 8 - COLOR 7

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESYLE NAME	DESCRIPTION
E-1	1234.12	0		<p>A) DECIMAL POINT IS THE LOCATION OF THE ELEVATION.</p> <p>B) THE SPOT TEXT SHALL BE PLACED AT THE TRUE ELEVATION.</p> <p>C) THE TEXT JUSTIFICATION SHALL CORRESPOND TO. THE DECIMAL POINT - CENTER BOTTOM JUSTIFICATION.</p> <p>D) USE LS=ph-float FOR LEVEL II POINT ON ELEVATED STRUCTURES.</p>
E-2	ROADWAYS AND RAILROADS			PLACE A SPOT ELEVATION EVERY 50 mm IF THERE ARE NO CONTOURS. CENTER SPOT ELEVATIONS BETWEEN TWO CONTOURS IF CONTOURS ARE 50 TO 100 mm APART.
E-3	SLOPING GROUND			PLACE A ROW OF SPOT ELEVATIONS 50 mm APART, CENTERED BETWEEN TWO CONTOUR, IF CONTOURS ARE 50 TO 100 mm APART.
E-4	FLAT GROUND			PLACE ON A FLEXIBLE 50 mm GRID AT LEAST 30 mm AWAY FROM A CONTOUR.
E-5	EXTRA SPOT ELEVATIONS	0		PLACE ON TOPS, SADDLES, RIDGES, DEPRESSIONS, DITCHES, ETC.
E-6	USE OF LEADER LINES 	0		USE LEADERLINES SPARINGLY, ONLY WHEN CLARIFICATION IS NECESSARY.
E-7		0		LABEL INDEX CONTOURS EVERY 40 cm OR CLOSER IN RUGGED TERRAIN (PLACE ANNOTATION ON LEVEL 8). ANNOTATION SHALL BE PLACED AT TRUE GROUND ELEVATION AND INDEX ANNOTATION WILL BE WT=0.

**FOR FUTURE USE**  
LEVEL 9

**(THIS PAGE IS LEFT BLANK INTENTIONALLY)**

# FILE IDENTIFICATION

LEVEL 10 - COLOR 0

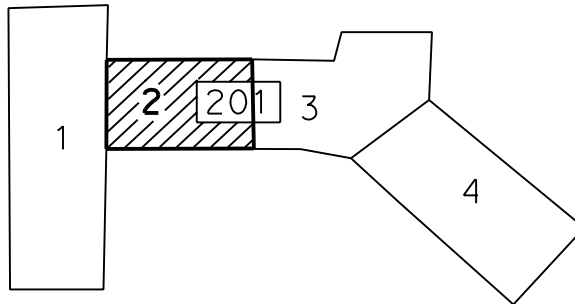
OoP  
REFERENCE  
CODE

EXAMPLE

WT CELL OR  
LINESTYLE NAME

DESCRIPTION

T-1



0

ORIENT THE FILE LAYOUT DIAGRAM SO THAT THE NORTH DIRECTION IS THE SAME AS MAP. LAYOUT DIAGRAM SHOULD OUTLINE MAPPING LIMITS OF EACH FILE. CROSSHATCH THE AREA COVERED BY CURRENT MAP FILE.

**201** IS A 1:200 SCALE MAP INSIDE A 1:500 SCALE MAPPING.

T-2

<p align="center"><b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b></p> <p>11:50:76..... CW 1:70:13.0..... FILE 1..... OF 29...</p> <p>PHOTO ASC: 0331:01..... PHOTO DATE: 11:13:02 PHOTO SCALE 1:3000.</p> <p>MAP ASC: 0301:1053... MAP COMPLETION DATE: 06:01:03</p> <p>FILENAME: 003010001.DGN.</p> <p>DIGITAL COMPILATION BY:</p> <p>.....DIGITAL MAPPING, INC.....</p>	
<p>VERTICAL DATUM: NAVD 1988</p> <p>COORDINATE SYSTEM: CCS 83.(199).35)..... ZONE 6</p> <p>UNITS= METERS. MAP SCALE= 1:500. CONTOUR INTERVAL= 0.5.0</p> <p>PLANE 26..... GO= 174225).6352..33725).6352...214749.3648.....</p>	

1

TB

THE TITLE BLOCK DATA, ENTERED IN THIS CELL IS SUPPLIED BY THE OFFICE OF PHOTOGRAMMETRY IN THE MAPPING ORDER LETTER.

THE CONTRACTOR IS REQUIRED TO FILL IN ALL BLANK SPACES IN THE ENTER DATA FIELDS OF THE TITLE BLOCK.

T-3



0

ML

METRIC LOGO.

# FILE IDENTIFICATION

LEVEL 10 - COLOR 0  
CONTINUED

OoP  
REFERENCE  
CODE

EXAMPLE

WT CELL OR  
LINSTYLE NAME

DESCRIPTION

T-5



1

NA

NORTH ARROW.

# DATA FOR DTM

LEVEL 11 - COLOR AS NOTED

OoP  
REFERENCE  
CODE

## DESCRIPTION

D-1 **POINT ELEMENTS:** AT THE SAME DIGITIZED SPOT ELEVATION DECIMAL POINT ON LEVEL 8, PLACE AN **ACTIVE POINT** ON LEVEL 11 FOR EACH SPOT ELEVATION. ANNOTATE ON LEVEL 8. POINT ELEMENT IS PLACED AT TEXT NODE (DECIMAL POINT). (ELEMENT TYPE=3, LV=11, CO=7, WT=0, LC=0)

1234.12  
ACTIVE POINT 

D-2 **TERRAIN BREAKLINES:** TRUE GROUND ELEVATION. (LV=11, CO=3, WT=0, LC=0)  
LINE WEIGHT=0, LINE CODE=0, COLOR=3

A) COMPILER AT SIGNIFICANT CHANGES IN THE SLOPE OF THE TERRAIN, MANMADE OR NATURAL.

EXAMPLES:

- 1) TOP AND TOE OF CUT OR FILL SLOPE.
- 2) EDGE OF CUT SLOPE BENCH.
- 3) ACROSS THE CREST OF A HILL.
- 4) ACROSS THE BOTTOM OF A DEPRESSION.
- 5) GROUND AS NEAR THE FRONT OF RETAINING AND HEADWALLS AS POSSIBLE.
- 6) GROUND AS NEAR THE BACK OF RETAINING AND HEADWALLS AS POSSIBLE.

B) DISTANCE BETWEEN POINTS ALONG THESE ELEMENTS SHALL NOT EXCEED 30 m (GROUND DISTANCE).

C) BREAK LINES SHALL NOT CROSS OTHER BREAKLINES.

D) IN ELEVATION WHERE BREAKLINES CROSS PLANIMETRIC OR CONTOUR LINES, THE DIFFERENCE BETWEEN CROSSING LINES WILL NOT EXCEED 0.1M.

E) BREAKLINE INTENDED TO SHOW AN OFFSET IN DISTANCE AND ELEVATION WILL NOT CROSS (ie. CURBLINE AND FLOWLINE OR GUTTER).

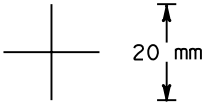
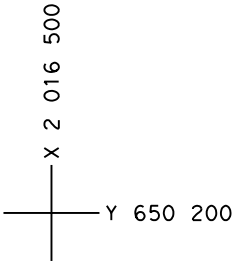
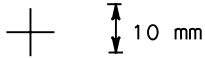
### NOTE :

- 1) SEE CONTRACT FOR PAYABLE AND NON-PAYABLE BREAKLINES.

D-3 AN "f" IN FRONT OF A LINSTYLE NAME INDICATES A LINSTYLE THAT WILL BE USED FOR ELEVATED STRUCTURES SUCH AS A BRIDGE. (ie. ph-fcurb)  
THESE ELEVATED LINSTYLES WILL APPEAR IDENTICAL TO THEIR GROUND COUNTERPARTS, BUT WILL HAVE A SMALL "f" IN FRONT OF THE NAME IN ORDER TO SEPERATE THEM FROM TRUE GROUND LINSTYLES.  
THESE LINSTYLES, WHICH ARE USED ON ELEVATED STRUCTURES, WILL BE REMOVED DURING PRODUCTION OF A DTM.

# GRID TICS AND GRID ANNOTATION

LEVEL 12 - COLOR 5

OoP REFERENCE CODE	EXAMPLE	WT	CELL OR LINESTYLE NAME	DESCRIPTION
G-1		0	TIC	GRID TICK - (A POINT CELL, VIEW INDEPENDENT).
G-2		0		<p>A) LABEL GRID COORDINATES ON THE OUTSIDE PERIMETER GRID TICKS ONLY. PLACE LABELS ON THE OUTSIDE OF THE GRID TICK, AWAY FROM THE MAPPING.</p> <p>B) TEXT SHALL BE ORIENTED ON GRID TICKS SUCH THAT LABELS ARE LEGIBLE RELATIVE TO THE DIRECTION OF THE FLIGHT LINE.</p>
G-3		0		SUPPLEMENTAL OR ALTERNATE COORDINATE SYSTEM GRID TICK.
G-4	<p>GRID TICK SPACING FOR 1:200 MAPPING IS 50 m AND AT EVEN 50 m COORDINATES.            GRID TICK SPACING FOR 1:500 MAPPING IS 100 m AND AT EVEN 100 m COORDINATES.            GRID TICK SPACING FOR 1:1000 MAPPING IS 200 m AND AT EVEN 200 m COORDINATES.            GRID TICK SPACING FOR 1:2000 MAPPING IS 400 m AND AT EVEN 400 m COORDINATES.</p>			
G-5	AT LEAST 3 GRID TICKS MUST BE COMMON BETWEEN FILES, PLOTTED SHEETS AND ADJOINING PROJECTS.			



## MAP SCALES

OoP REFERENCE CODE	MAPPING SCALE	C.I.	INDEX C.I.	SPOT ELEV	GRAPHIC SCALE	TEXT SIZE	MAPPING USED IN CONJUNCTION WITH:
S-1	1:200	0.25 m	1 m	0.00	0.4	0.6 m	STRUCTURES DESIGN.
S-2	1:500	0.50 m	2 m	0.00	1.0	1.5 m	ROADWAY DESIGN.
S-3	1:1000	1.0 m	5 m	0.0	2.0	3 m	STUDIES: e.g. ENVIRONMENTAL, FEASIBILITY, AND PRELIMINARY DESIGN.
S-4	1:2000	2.0 m	10 m	0.0	4.0	6 m	PRELIMINARY STUDIES: e.g. NEW ROUTE LOCATION, BYPASS, MASS TRANSPORTATION.

SEE ALSO G-4 ON PAGE 22  
AND M-11 ON PAGE 4.

# NOTES

## OoP REFERENCE CODE

## DESCRIPTION

- N-1 SMALL CIRCLES AND SQUARES SHALL BE 2 mm UNLESS OTHERWISE NOTED.
- N-2 SPACES IN DASHED LINES SHALL BE 1.5 mm UNLESS OTHERWISE NOTED.
- N-3 TOPOGRAPHY SHALL BE DRAFTED WITH TWO LINE WEIGHTS, FINE AND THICK.  
HIGHWAY, STREET, AND PROPER NAMES SHALL BE DRAFTED WITH MEDIUM WEIGHT.
- FINE - 0.3 mm = MicroStation WT=0  
**MEDIUM** - 0.5 mm = MicroStation WT=1  
**THICK** - 0.6 mm = MicroStation WT=2
- N-4 THE FLIGHT LINE ANGLE WILL BE THE ACTIVE ANGLE FOR TEXT IN THE MODEL.
- N-5 TEXT SHALL BE UPPER CASE, VIEW DEPENDENT, LS=0, CALTRANS FONT 2, AND 3 mm SQUARE. ALLOWABLE EXCEPTIONS TO FONT AND SIZE ARE IN CERTAIN CELLS AND DIAGRAMS. (i.e. TITLE BLOCKS AND FILE LAYOUT DIAGRAMS).
- N-6 STATE HIGHWAYS SHALL BE LABELED WITH COUNTY ABBREVIATION AND ROUTE NUMBER; e.g. **SAC - 80**. HIGHWAY, STREET, AND PROPER NAMES SHALL BE REPEATED EVERY 0.5 m OR LESS AS NECESSARY. LABELS SHALL BE ON THE LEVEL AND NEAR THE ELEVATION OF THAT WHICH THEY ANNOTATE; e.g. **PACIFIC OCEAN** (LV=6, LC=0, WT=1, CO=1). AN EXCEPTION TO THIS IS CONTOUR ANNOTATION AND SPOT ELEVATIONS WHICH ARE ON LEVEL 8 (SPOT ELEV) INSTEAD OF LEVEL 7.
- N-7 SURFACE TYPES ON LEVELS 2,3,4,5 AND 6 SHALL BE LABELED A MAXIMUM OF 500 mm. (250 m) APART (ASPH, CONC, DIRT, GRASS AND GNV)
- N-8 LABEL STRUCTURE AND BUILDING "SHADOWS" WHERE THE GROUND IS NOT VISIBLE.

# NOTES

## OoP REFERENCE CODE

## DESCRIPTION

N-9 IF MAPPING IS METRIC, THE DGN FILE WILL HAVE WORKING UNIT PARAMETERS:

### Unit Names

Master Units: m  
Sub Units: mm

### Resolution

1000 mm Per m  
10 Pos Units Per mm

N-10 IF MAPPING IS NOT METRIC (ENGLISH OR FEET), DGN FILE WILL HAVE WORKING UNIT PARAMETERS:

### Unit Names



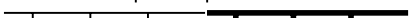
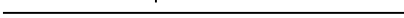



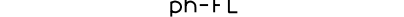


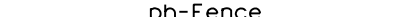













Master Units: FT  
Sub Units: TN

### Resolution

10 TN Per FT  
1000 Pos Units Per TN



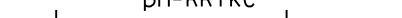


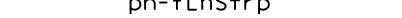



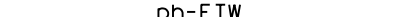








# PHOTOGRAMMETRY CUSTOM LINSTYLE UPDATE

V2Photo.rsc - February, 2004

WEIGHT	LEVEL	UPDATED ORIGINAL CUSTOM LINSTYLES	WEIGHT	LEVEL	NEW CUSTOM LINSTYLES
2	2/3	ph-Curb 	2	2	ph-Build 
0/2	7	ph-DepCont 	0	2	ph-Deck 
0/2	7	ph-DepGNV 	2	2/3	ph-Dike 
0	2	ph-Dirt 	0	6	ph-FL 
0	2/3	ph-Asph 	0	4	ph-Hedge 
0	2	ph-Fence 	0	2	ph-MWallF 
0/2	7	ph-GNV 	0	11	ph-fBreak 
0	2	ph-GrdRail 	2	3	ph-fBrgRail 
0	2/3	ph-LnStrp 	0/2	2/3	ph-fConc 
0		ph-Levee 	7		ph-fCont 
0	2	ph-MWall 	0/2	7	ph-fGNV 
0	2	ph-MedBar 	0/2	7	ph-fDepCont 

# PHOTOGRAMMETRY CUSTOM LINESTYLE UPDATE

V2Photo.rsc - February, 2004

		UPDATED ORIGINAL CUSTOM LINESTYLES			NEW CUSTOM LINESTYLES
WEIGHT	LEVEL		WEIGHT	LEVEL	
2	2	 ph-RWall	0/2	7	 ph-fDepGNV
0	2	 ph-RR1KC	2	2/3	 ph-fCurb
0	2	 ph-RR1K	0	2/3	 ph-fLnStrp
		ph-RR500			
0	2	 ph-RR200	0	2	 ph-fMedBar
0	2	 ph-ETW	2	3	 ph-fETW
0	3	 ph-ETW2	2	3	 ph-fETW2
2	3	 ph-Trees	0	11	 ph-Hidden
0	4	 ph-RWallF	0	2	 ph-Cattle
2	2	 ph-RWallM	0	4	 ph-Vines
2	2	 ph-Water			
0	6	 ph-Water			